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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,069	11/26/2003	Muneharu Itoh	031284	7768

23850 7590 09/07/2005

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EXAMINER	
DOTE, JANIS L	

ART UNIT	PAPER NUMBER
1756	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/721,069	ITOH, MUNEHARU	
	Examiner	Art Unit	
	Janis L. Dote	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5 and 6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5 and 6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The examiner acknowledges the cancellation of claims 4 and 7-22 and the amendment to claim 1 set forth in the amendment filed on Jun. 16, 2005. Claims 1-3, 5, and 6 are pending.

2. Applicant's election of the invention of Group I, claims 1-6 and 20-22, in the reply filed on Jun. 16, 2005, is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. The objections to the specification set forth in the office action mailed on Feb. 22, 2005, paragraph 5, items (1) and (2), have been mooted by the cancellation of claims 20 and 21 set forth in the amendment filed on Jun. 16, 2005. The instant claims do not require that the recited cleaning blade have a JIS-A hardness and a rebound resilience as recited in claims 20 and 21. Accordingly, the determination of the JIS-A hardness and the determination of the rebound resilience are not critical elements with respect to the subject matter recited in the instant claims.

The rejections of claims 20 and 21 under 35 U.S.C. 112, second and first paragraphs, set forth in the office action

mailed on Feb. 22, 2005, paragraphs 8 and 10, respectively, have been mooted by the cancellation of claims 20 and 21 set forth in the amendment filed on Jun. 16, 2005.

The objection to claims 20-22 under 37 CFR 1.75(c) set forth in the office action mailed on Feb. 22, 2005, paragraph 11, has been mooted by the cancellation of claims 20-22 set forth in the amendment filed on Jun. 16, 2005.

The rejection of claim 4 under 35 U.S.C. 103(a) over US 2001/0033982 A1 (Ishikawa) combined with Japanese Patent 2000-221726 (JP'726), as set forth in the office action mailed on Feb. 22, 2005, paragraph 19, has been withdrawn in response to the cancellation of claim 4 and the amendment to claim 1 set forth in the amendment filed on Jun. 16, 2005. That amendment added the limitations (1) that the toner comprises an external additive having a volume average primary particle diameter in the range of 0.1 to 3.0 μm; and (2) that the average number of those particles on the surface of the colored polymer particle, i.e., the toner particle, is in the range of 3-500 particles per single colored polymer particle. As discussed in the last office action, JP'726 teaches the presence of hydrophobic silica particles comprising aggregates having particle sizes of 0.2 to 0.4 μm. JP'726 does not disclose that the particle sizes are a volume average particle size as recited in the instant claims.

Nor is there sufficient evidence in the present record to reasonably presume that the JP'726 aggregates have a volume average primary average particle size as recited in instant claim 1.

4. The disclosure is objected to because of the following informalities:

The use of trademarks, e.g., "Henschel mixer" [sic: HENSCHEL MIXER] at line 31 of the amended paragraph beginning at page 30, line 10, of the specification, set forth in the amendment filed on Jun. 16, 2005, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicant should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Applicant's arguments filed on Jun. 16, 2005, have been fully considered but they are not persuasive.

Applicant asserts that the amendment filed on Jun. 16, 2005, overcomes the objection. However, as discussed above, that amendment did not capitalize all of the trademarks disclosed in the instant specification. Accordingly, the objection stands.

5. The examiner notes that the instant specification determines the "average circle degree" recited in the instant claims by the formula disclosed at page 10, paragraphs 0025-0026. The specification further discloses in paragraph 0026 that the average circle degree may be measured with "flow type particle projection image analyzers, such as FPIA-1000 or FPIA-2000, products of Sysmex Corporation."

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-3, 5, and 6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Instant claim 1 recites that the toner comprises an external additive having a volume average primary particle diameter in the range of 0.1 to 3.0 μm, and that the average number of those particles on the surface of the colored polymer particle, i.e., the toner particle, is in the range of 3-500 particles per single colored polymer particle.

The originally filed specification does not provide an adequate written description of said toner. The originally filed specification discloses and originally filed claim 4 recites that the toner comprises an external additive, wherein the average number of particles of the external additive "having a particle diameter in the range of 0.1 to 3.0 μm" on the surface of the colored polymer particle, is in the range of 3-500 particles per single colored polymer particle. See the originally filed specification at page 14, lines 10-14. The originally filed specification does not disclose that external additive particles having a "volume average primary particle diameter in the range of 0.1 to 3.0 μm" are present on the surface of a single toner particle as recited in the instant

claims. The phrase "particles . . . having a volume average primary particle diameter of 0.1 to 3.0 μm" is broader than the disclosed particles having a particle diameter in the range of 0.1 to 3.0 μm because it includes particles that have particle diameters smaller and larger than 0.1 to 3.0 μm.

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2001/0033982 A1 (Ishikawa) combined with US 6,897,001 B2 (Mizoe).

Ishikawa discloses a toner comprising: (1) colored polymeric core particles comprising a binder resin, a colorant, and a wax, i.e., a parting agent, coated with a layer of particulate resin; and (2) externally added hydrophobic silica particles. The toner has a volume-average particle diameter of 7.8 μm and a 50% circular degree of 0.98. The toner has an absolute charge value of 28 μC/g in a toner layer formed on a developing roller. Paragraphs 0184-0185; example 6 in paragraphs 0305 to 0328; and the table at page 30, example 6. The Ishikawa colored polymeric particles meet the compositional limitations of the colored polymer particle recited in instant

claims 1 and 2. The Ishikawa volume-average particle diameter and the absolute charge value meet the particle diameter and absolute charge value recited in instant claim 1.

The Ishikawa 50% circular degree of 0.98 is within the numerical range of the average circle degree of 0.95-0.995 recited in instant claim 1. According to Ishikawa, the 50% circular degree is determined using a flow type particle image analysis apparatus FPIA-2000 produced by Sysmex Corporation, and corresponds to the cumulative particle size value at 50% of the value determined by the formula "the circumference length of circle having the same area as that of projected area of particle/circumference length of projected image of particle." Paragraphs 0175-0177. The Ishikawa 50% circular degree appears to be determined in the same manner as the "average circle degree" recited in instant claim 1. See paragraph 5, supra. Accordingly, it is reasonable to presume that the Ishikawa 50% circular degree of 0.98 meets the average circle degree recited in instant claim 1. The burden is on applicant to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Ishikawa does not explicitly state that the toner has a core-shell structure as recited in instant claim 3. However, as discussed supra, the Ishikawa toner comprises colored polymeric core particles coated with a layer of particulate resin.

Example 6 in paragraphs 0305 to 0328. The Ishikawa cores are obtained by agglomerating primary polymer resin particles comprising a wax and colorant particles. The particles in the agglomerated particles are "fused bonded" to each other. See Fig. 2; paragraphs 0139 and 0323; and the table at page 29, example 6. The fused-bonded cores in example 6 are coated with a layer of particulate resin. The weight ratio of particulate resin to the primary resin particles is 11.1 w/w%. The value of 11.1 w/w% was determined from the information provided in paragraph 0331. As seen in Ishikawa's Fig. 2, the fused-bonded cores are coated with a layer of particulate resin. According to Ishikawa, a coating amount of the particulate resin is preferably 3 w/w% or more, preferably of 5 w/w% or more of primary polymer particles. This range of coating amount provides "coating effects." Paragraph 0138. Because the weight ratio of particulate resin to the primary polymer particles is 11.1%, it is reasonable to presume that the fused-bonded core particles in example 6 are coated with a layer of particulate resin, i.e., a shell. Accordingly, it is reasonable to presume that the toner in example 6 of Ishikawa has a core-shell structure as recited in instant claim 3. The burden is on applicant to prove otherwise. Fitzgerald, supra.

Ishikawa does not disclose that the toner comprises an external additive present on the surface of the toner particle as recited in instant claim 1. However, as discussed supra, the toner in example 6 of Ishikawa comprises externally added hydrophobic silica particles. Ishikawa does not limit the type of external additives used. Paragraphs 0120-0121.

Mizoe discloses a toner comprising externally added hydrophobic silica particles and tungsten-containing tin oxide particles having a volume average particle size of 0.8 μm, which is within the range of 0.1 to 3.0 μm recited in instant claim 1. See fine particles A-1 at col. 48, lines 8-22; and toner A-1 at col. 49, lines 25-33. According to Mizoe, the toner is capable of stably producing high-quality images in continuous image formation and regardless of environmental changes. Col. 9, lines 43-48, and Table 1 at col. 51, toner A-1. Mizoe teaches that the tungsten-containing tin oxide particles are preferably "present at the toner particle surface at a rate of at least 0.3 particle, more preferably 1.0 to 50 particles . . . per one toner particle." Col. 17, lines 1-4. In toner A-1, the ratio of tungsten-containing tin oxide particles attached to the surface of the toner particles is 5.0 particles per one toner particle. Col. 49, lines 30-31. The number of particles of 5.0 per one toner particle is within the number range of 3 to

500 per single colored particle recited in instant claim 1. According to Mizoe, "[b]elow 0.3 particle, the flowability-improving effect is liable to be lowered. Col. 17, lines 4-5.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Mizoe, to externally add the Mizoe tungsten-containing tin oxide particles having a volume average particle size of 0.8 μm to the toner particles in example 6 of Ishikawa as taught by Mizoe, such that the resultant toner comprises from 5.0 to 50 tungsten-containing tin oxide particles per one toner particle. That person would have had a reasonable expectation of successfully obtaining a toner that stably produces high-quality images in continuous image formation and regardless of environmental changes as disclosed by Mizoe.

Ishikawa does not disclose that its toner is a toner "for an image-forming apparatus, which has a cleaning means with a cleaning blade to remove a residual toner remaining on a surface of a photoconductive member after transfer" as recited in instant claim 1. However, that recitation is merely a statement of intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the

prior art structure is capable of performing the intended use, then it meets the claim. See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458, 459 (CCPA 1963). As discussed above, the toner rendered obvious over the combined teaching of Ishikawa and Mizoe meets the toner compositional limitations recited in the instant claims. Accordingly, the recitation "for an image forming apparatus, which has a cleaning means with a cleaning blade . . . " does not distinguish the toner recited in the instant claims from the toner rendered obvious over the combined teachings of the cited prior art.

Applicant's arguments filed on Jun. 16, 2005, have been fully considered but they are not persuasive.

Applicant states that Ishikawa determines the toner charge amount by a blow-off method rather than by the vacuum method that applicant uses to determine the charge amount in the examples of the instant specification. Applicant asserts that in the blow-off method, the charged amount of toner depends on the type of carrier used, while in the vacuum method, "the charged amount of the toner itself is determined."

Applicant's arguments are not persuasive. Instant claim 1 does not require that the recited toner absolute charge be determined by the method used in the examples in the instant specification. Moreover, the instant specification does not

define the absolute charge recited in instant claim 1 as being determined by that method disclosed in the instant specification. Applicant cannot argue patentability based on limitations that are not present in the claims. Furthermore, as discussed in the above rejection, the Ishikawa toner absolute charge value of 28 μC/g is within the absolute charge value range of 20 to 70 μC/g recited in instant claim 1. There is no evidence in the present record showing that the Ishikawa toner does not have an absolute charge value within the range recited in instant claim 1 as determined by the method disclosed in the instant specification. Thus, it is reasonable to presume that the toner disclosed by Ishikawa has an absolute charge value in the range of 20 to 70 μC/g as determined by the method disclosed in the instant specification. Applicants have the burden to prove otherwise. Fitzgerald, supra.

Applicant further argues that Ishikawa does not disclose or suggest the use of external additive particles having an average volume primary particle diameter as recited in instant claim 1. However, as discussed in the rejection above, Mizoe teaches the advantages of using externally added tungsten-containing tin oxide particles that meet the external additive limitations recited in instant claim 1. Thus, for the reasons discussed in

the rejection above, the toner recited in the instant claims is rendered obvious over the combined teachings of the prior art.

10. Claims 1-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/58790 (Masuo), as evidenced by applicant's admissions at page 7, line 27, page 9, lines 23-26, and page 10, lines 7-8, of the instant specification (applicant's admissions I), combined with Mizoe.

US 6,562,535 B1 (US'535), filed under 35 U.S.C. 371, is the national stage of the WO application of Masuo, and therefore must have been an accurate English-language translation of the WO application of Masuo. See US'535, the translation of Masuo, for cites.

Masuo discloses a toner comprising: (1) colored polymeric core particles comprising a binder resin, a colorant, dipentaerythritol hexamyristate, and a charge control resin, covered with a polymeric shell; and (2) externally added hydrophobic silica particles. The toner has a volume-average particle diameter of 6.3 μm and an absolute charge value of 36 μC/g in a toner layer formed on a developing roller in an environmental of "normal" temperature of 23°C and "normal" humidity of 50% relative humidity. US'535, col. 21, lines 49-51 and 53-57; example 10 at cols. 31-33; and Table 5 at col. 34,

example 10. The charge control resin has a weight average molecular weight of 12,000, which is within the weight average molecular weight range of 2,000 to 50,000 recited in instant claim 6. Col. 31, lines 45-47, and Table 5 at col. 34, example 10. The instant specification at page 7, line 27, identifies dipentaerythritol hexamyristate as a parting agent. The Masuo volume-average particle diameter and absolute charge value meet the particle diameter and absolute charge value recited in instant claim 1.

Masuo does not disclose that the toner in example 10 has an average circle degree as recited in instant claim 1. However, Masuo discloses that the toner in example 10 has a "spheriodicity" (dl/ds) of 1.12. See Table 5, example 10. Masuo discloses that the toner particles are "substantially spherical" when the spheriodicity of the toner particles, which is represented by a ratio (dl/ds) of the length (dl) to the breath (ds) of the toner particle, is preferably 1 to 1.3. US'535, col. 18, lines 30-33. Thus, if the toner particles were perfect spheres, the value of dl/ds would be 1. Masuo discloses that the toner in example 10 reproduces images of high resolution, wherein the images have a resolution of "one-dot line" and "one-dot white line." US'535, col. 3, lines 55-56; col. 23, lines 14-20; and Table 5, example 10. This property

appears to be the property sought by applicant. The instant specification discloses that "[i]f the average circle degree is below 0.95, the resultant toner is poor in fine line reproduction at a L/L condition . . . a N/N condition . . . and a H/H condition . . ." Specification, page 9, lines 23-26. The instant specification at page 10, lines 7-8, also discloses that "[I]f the toner particles are perfectly spherical, the average circle degree equals to 1." Because the toner particles in example 10 of Masuo are "substantially spherical" and appear to have the property sought by applicant, it is reasonable to presume that the toner particles in example 10 of Masuo have an average circle degree as recited in instant claim 1. The burden is on applicant to prove otherwise. Fitzgerald, supra.

Masuo does not disclose that the toner comprises an external additive present on the surface of the toner particle as recited in instant claim 1. However, as discussed supra, the toner in example 10 of Masuo comprises externally added hydrophobic silica particles. Masuo does not limit the type of external additives used. US'535, col. 19, lines 1-16. Masuo also does not limit the amount of external additives used. US'535, col. 19, lines 42-43.

Mizoe teaches the advantages of externally adding tungsten-containing tin oxide particles having a volume average particle

size of 0.8 μm, which is within the range of 0.1 to 3.0 μm recited in instant claim 1. Mizoe teaches that the tungsten-containing tin oxide particles are preferably "present at the toner particle surface at a rate of at least 0.3 particle, more preferably 1.0 to 50 particles . . . per one toner particle." The discussion of Mizoe in paragraph 9 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Mizoe, to externally add the Mizoe tungsten-containing tin oxide particles having a volume average particle size of 0.8 μm to the toner particles in the toner in example 10 of Masuo as taught by Mizoe, such that the resultant toner comprises from 5.0 to 50 tungsten-containing tin oxide particles per one toner particle. That person would have had a reasonable expectation of successfully obtaining a toner that produces high-quality images in continuous image formation and regardless of environmental changes as disclosed by Mizoe.

Masuo does not disclose that its toner is a toner "for an image-forming apparatus, which has a cleaning means . . . " as recited in instant claim 1. However, for the reasons discussed in paragraph 9 above, the recitation in claim 1 is merely a statement of intended use. As discussed above, the toner

rendered obvious over the teachings in Masuo, as evidenced by applicant's admissions I, combined with Mizoe, meets the toner compositional limitations recited in the instant claims. Accordingly, the recitation "for an image forming apparatus, which has a cleaning means with a cleaning blade . . . " does not distinguish the toner recited in the instant claims from the toner rendered obvious over the combined teachings of the cited prior art.

11. Claims 1-3, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuo, as evidenced by applicant's admission at page 7, lines 27, of the instant application (applicant's admission II), combined with US 6,096,468 (Ohno) and Mizoe. For the reasons discussed in paragraph 10 above, see US'535, the translation of Masuo, for cites.

Masuo discloses a toner as described in paragraph 10 above, which is incorporated herein by reference. The toner particles are obtained by a suspension polymerization process. US'535, col. 32, lines 40-59.

Masuo does not explicitly disclose that the toner in example 10 has an average circle degree as recited in instant claim 1. However, Masuo discloses that it is preferred that the toner particles are "substantially spherical as demonstrated by

a ratio (dl/ds) of the length (dl) to the breath (ds) [of the toner particle] of preferably 1 to 1.3." US'535, col. 18, lines 30-33. Masuo discloses that such a spherical toner can be obtained by the suspension polymerization method. Col. 18, lines 36-37. Masuo discloses that when a "substantially spherical" toner is used as a one-component developer, the "transfer efficiency of a toner image on a photosensitive member to a transfer medium is enhanced." US'535, col. 19, lines 33-36.

Ohno discloses that when toner particles are made to have an average circularity of from 0.920 to 0.995, preferably from 0.950 to 0.995 in its circularity frequency distribution, the "toner having a small particle diameter can be greatly be improved in transfer performance . . . and also can greatly be improved in the developability of low potential latent images. Such tendencies are very effectively appear [sic] especially when a digital system of minute spot latent images are developed or when toner images are transferred many times through the intermediate transfer member to form a full-color image, bringing about a good compatibility with [sic] image forming apparatus." Col. 8, lines 43-55. The improved transfer performance disclosed by Ohno appears to be the property sought by Masuo for using "substantially spherical" toners. The Ohno

average circularity is determined by a formula that is identical to the formula used in determining the average circle degree recited in instant claim 1. Ohno discloses that the average circularity is measured with the "flow type particle projection image analyzer" FPIA-1000, manufactured by Toa Iyou Denshi K.K. See Ohno, col. 9, lines 6-40, and paragraph 5, supra. Ohno also discloses that the average circularity of the toner can be controlled by adjusting the pH of an aqueous medium in the granulation step in suspension polymerization. Col. 9, lines 1-5.

It would have been obvious for a person having ordinary skill in the art to adjust the pH in the granulation step in the suspension polymerization method used to obtain the toner particles in example 10 of Masuo as taught by Ohno, such that the resultant toner particles have an average circularity of 0.95 to 0.995 as recited in instant claim 1, because that person would have had a reasonable expectation of successfully obtaining a toner having improved transfer performance and developability of low potential latent images as disclosed by Ohno.

Masuo does not disclose that the toner comprises an external additive present on the surface of the toner particle as recited in instant claim 1. However, as discussed supra, the

toner in example 10 of Masuo comprises externally added hydrophobic silica particles. Masuo does not limit the type of external additives used. US'535, col. 19, lines 1-16. Masuo also does not limit the amount of external additives used. US'535, col. 19, lines 42-43.

Mizoe teaches the advantages of externally adding tungsten-containing tin oxide particles having a volume average particle size of 0.8 μm, which is within the range of 0.1 to 3.0 μm recited in instant claim 1. Mizoe teaches that the tungsten-containing tin oxide particles are preferably "present at the toner particle surface at a rate of at least 0.3 particle, more preferably 1.0 to 50 particles . . . per one toner particle." The discussion of Mizoe in paragraph 9 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Mizoe, to externally add the Mizoe tungsten-containing tin oxide particles having a volume average particle size of 0.8 μm to the toner particles in the toner rendered obvious over the combined teachings of Masuo, as evidenced by applicant's admission II, and Ohno, as taught by Mizoe, such that the resultant toner comprises from 5.0 to 50 tungsten-containing tin oxide particles per one toner particle. That person would have had a reasonable

expectation of successfully obtaining a toner that produces high-quality images in continuous image formation and regardless of environmental changes as disclosed by Mizoe.

Masuo does not disclose that its toner is a toner "for an image-forming apparatus, which has a cleaning means . . . " as recited in instant claim 1. However, for the reasons discussed in paragraph 9 above, the recitation in claim 1 is merely a statement of intended use. As discussed above, the toner rendered obvious over the teachings of Masuo, as evidenced by applicant's admission II, combined with Ohno and Mizoe, meets the toner compositional limitations recited in the instant claims. Accordingly, the recitation "for an image forming apparatus, which has a cleaning means with a cleaning blade . . . " does not distinguish the toner recited in the instant claims from the toner rendered obvious over the cited prior art.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuo, as evidenced by applicant's admissions I, combined with Mizoe, as applied to claim 1, further combined with US 6,074,794 (Fushimi). For the reasons discussed in paragraph 10 above, see US'535, the translation of Masuo, for cites.

Masuo, as evidenced by applicant's admissions I, combined with the teachings of Mizoe renders obvious a toner as described in paragraph 10 above, which is incorporated herein by reference. The toner in example 10 of Masuo has a volume average particle diameter of 6.3 μm. Masuo discloses that "[I]n order to enhance resolution to obtain images of high definition, it is particularly desirable that the volume average particle diameter of the toner be controlled to preferably 2 to 9 μm, more preferably 3 to 8 μm." US'535, col. 18, lines 16-20.

Masuo does not disclose that the toner in example 10 has the particle diameter distribution recited in instant claim 5.

Fushimi discloses toner particles having a volume average particle diameter of 6.2 μm and comprising 36% by number of particles having a diameter of 4 μm or less, based on the total number of particles, and 0.0 % by volume of particles having a diameter of 12 μm or more. See the yellow toner in Table 5, col. 12. The volume average particle diameter and particle distribution of 36 % by volume are within the ranges of 3-8 μm and 3-70 number percent recited in instant claims 1 and 5, respectively. The volume average particle diameter is also within the teachings of Masuo. Fushimi discloses that toner particles used in a "single-typé" or two-component developer may have a volume average diameter of from 5 to 9 μm, and may

comprise particles having a diameter of 4 μm or less in an amount of not more than 40% of the total number of toner particles, and particles having a particle diameter of at least 12 μm in an amount of no more than 10% of the total volume of the toner particles. Col. 5, lines 33-39; and col. 7, lines 3-4. According to Fushimi, when the volume average particle diameter is greater than 9 μm, the toner image lacks sharpness due to the toner dispersion of the image. Fushimi also teaches that when the volume average is less than 5 μm or when particles having a diameter of 4 μm or less are present in an amount of more than 40% of the total number of the toner particles, the toner is apt to be excessively charged so that the developing efficiency of the toner and image reproducibility are lowered. Col. 5, lines 40-52. When particles having a diameter of at least 12 μm are present in an amount greater than 10% of the total volume of particles, image reproducibility is lowered. Col. 5, lines 52-55. Thus, the prior art recognizes that the volume average particle diameter and particle size distributions are result-effective variables. The variation of result-effective variables is presumably within the skill of the ordinary worker in the art.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Fushimi, to

adjust, through routine experimentation, the particle size of toner particles in the toner rendered obvious over the combined teachings of Masuo, as evidenced by applicant's admission I, combined with Mizoe, such that the resultant toner particles have a volume average diameter of 6.2 μm and comprise, for example, 36% by number of particles having a diameter of 4 μm or less, based on the total number of particles, and 0.0 % by volume of particles having a diameter of 12 μm or more, because that person would have had a reasonable expectation of successfully obtaining a toner having good developing efficiency and providing sharp color toner images and good image reproducibility.

13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuo, as evidenced by applicant's admission II, combined with Ohno and Mizoe, as applied to claim 1 above, further combined with Fushimi. For the reasons discussed in paragraph 10 above, see US'535, the translation of Masuo, for cites.

Masuo, as evidenced by applicant's admission II, combined with the teachings of Ohno and Mizoe renders obvious a toner as described in paragraph 11 above, which is incorporated herein by reference.

None of cited references discloses toners having the particle diameter distribution recited in instant claim 5.

Fushimi discloses toner particles having a volume average particle diameter of 6.2 μm and comprising 36% by number of particles having a diameter of 4 μm or less, based on the total number of particles, and 0.0 % by volume of particles having a diameter of 12 μm or more. The discussions of Fushimi and Masuo in paragraph 12 above are incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Fushimi, to adjust, through routine experimentation, the particle size of toner particles rendered obvious over the combined teachings of Masuo, as evidenced by applicant's admission II, combined with Ohno and Mizoe, such that the resultant toner particles have a volume average diameter of 6.2 μm and comprise, for example, 36% by number of particles having a diameter of 4 μm or less, based on the total number of particles, and 0.0 % by volume of particles having a diameter of 12 μm or more. That person would have had a reasonable expectation of successfully obtaining a toner having good developing efficiency and providing sharp color toner images and good image reproducibility.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (571) 273-8300.

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Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD
Sep. 1, 2005

JANIS L. DOTE
PRIMARY EXAMINER
GROUP ~~1500~~ 1700